

Environment Agency permitting decisions

Variation

We have decided to issue the variation for Westmill Waste Management Facility operated by Biffa Waste Services Limited.

The variation number is EPR/DP3431PC/V011.

We consider in reaching that decision we have taken into account all relevant considerations and legal requirements and that the permit will ensure that the appropriate level of environmental protection is provided.

Purpose of this document

This decision document:

- explains how the application has been determined
- provides a record of the decision-making process
- shows how all relevant factors have been taken into account
- justifies the specific conditions in the permit other than those in our generic permit template.

Unless the decision document specifies otherwise we have accepted the applicant's proposals.

Structure of this document

- Key issues
- Annex 1 the decision checklist
- Annex 2 the consultation and web publicising advertising responses

Key issues of the decision

This variation amends the permit to make the following changes to the permit:

- Adds an additional leachate treatment plant that will accept leachate and other effluents from Westmill Landfill and other off-site sources;
- Adds wastes for treatment within the new leachate treatment plant;
- Allows the installation of carbon gas filters for the landfill gas engines;
- Allows temporary changes to the Soil Treatment Facility to allow a phased introduction of operations. The operator has confirmed that leachates from hazardous and non hazardous wastes will be kept separate during the phasing; and
- Authorises the acceptance and treatment of street cleaning residues under waste code 20 03 03. The street cleaning residues will be dewatered before being treated in the Soil Treatment Facility. The dewatered effluent will be treated within the Westmill Leachate Treatment Plant).

Leachate Treatment Facility Tank Design and Containment

The operator has installed a second leachate treatment plant at Westmill Waste Management Facility to treat leachate from Westmill Landfill and the associated Soil Treatment Facility as well as from other landfill sites operated by Biffa Waste Services Limited. The leachate treatment plant will consist of two Anaerobic Sequence Batch Reactor Tanks (SBR tanks), two raw leachate tanks (one of which will be used to store leachate imported from other facilities while the second raw leachate tank will store leachate from the Westmill Facility), and a final balancing tank which will store treated leachate prior to discharge to sewer. The new facility will have the capacity to treat up to 150 m³ of leachate per day and will be located to the west of the landfill near the site entrance.

The new leachate treatment plant will not replace the existing leachate treatment facility which is a Methane stripping leachate treatment plant. The new facility will provide additional capacity as the current leachate treatment facility is inadequate to treat the amount of leachate being produced by the site. The existing methane stripping plant will continue to accept leachate for treatment from Westmill Landfill and the Soil Treatment Facility only and will not be utilised to treat leachate from elsewhere.

Leachate will be brought onto site in tankers or bowsers. All deliveries will take place in a tanker loading bay which has an impermeable concrete surface and is equipped with bunded edges as well as an underground sump to catch spills in the event of an accident. Unloading of tankers will be supervised and attended at all times during the operation. Any spillages will be cleared up immediately.

The operator has demonstrated to our satisfaction that they have appropriate containment in place in order to ensure all tank contents can be contained in the

event of leaks, spills or catastrophic failure. The compound has also been provided with crash protection in the event of tanker collision.

Specifically the operator has made provisions for the following:

- Raw and final leachate tanks will be provided with secondary containment in the form of a liner which will comprise of a geosynthetic clay liner (GCL), which will be over-lain by a linear low-density polyethylene geomembrane (LLDPE) and covered by a UV resistant geotextile liner which will protect the geomembrane from puncture and sun damage.

The liner will be extrusion welded to the legs of the tanks and any perforations sealed. Any gaps under the liner will be packed with bentonite to form an appropriate seal. The operator has confirmed that they will replace the upper geotextile liner every 5 years and will undertake an inspection of the middle geomembrane at this time. The operator has stated they will place crash barriers around the sand filled barriers to prevent vehicle impact.

- The sodium hydroxide tank will be provided with secondary containment in the form of an integrated secondary bund which will provide 110% capacity of the tank contents. The bund stretches halfway up the sides of the inner tank, which is inadequate to provide the necessary bunding. The operator has therefore confirmed that they will install a polypropylene skin around the upper part of the tank which will direct any leaks into the lower banded section of the tank.
- The Sequence Batch Reactor (SBR) tanks as they currently stand do not provide adequate bunding to contain the tanks contents in the event of tank failure. Each SBR tank is surrounded by a secondary bund which will contain approximately 80 - 90% of the tanks contents in the event of a spill. The tanks and their surrounding bunds are bolted to a single concrete floor. We have asked the operator undertake additional works on the bunding of these tanks to ensure that adequate capacity is provided to contain the liquids in the event of tank failure.

The operator has undertaken a retrofit of the tanks and has now connected the SBR tank bunds together via a high level pipe. The pipe will provide the additional capacity required in the event of full tank failure and will direct any overflow into the neighbouring SBR tank bund. The pipe has been sized appropriately to provide the additional bund capacity required. We are satisfied that, while the design may be novel, it will ensure that each bund will contain 100% of the tanks contents in the event of failure as is required by the Waste BREF. We are satisfied that in the event of tank failure, leachate will not overtop the bund and discharge to the made ground. The operator has also undertaken retro engineering to ensure that all penetrations that were previously within the bund have been either removed or blocked up. The SBR tank bunds will still however contain a man hatch which is considered to be a bund penetration. These will therefore be bolted shut and the handles removed so that they cannot be accidentally opened or left open. We are satisfied that these are air tight and therefore will form an appropriate seal.

- All pipes are above ground with the exception of the long run pipe between the SBRs and the tanks for the raw leachate feed and associated decant pipes. Below ground pipes are buried to prevent a trip hazard, ensure better support, prevent possible damage to pipe work and ensure no extremes of

temperature within the pipe work. All pipes have been pressure tested to confirm that they do not leak and will be pressure tested annually to confirm no defects in the pipe work.

We are satisfied the operator has demonstrated they will retrospectively install appropriate infrastructure and put in place appropriate management systems to ensure that the risk to the environment is insignificant. We have assessed the operator's proposals and consider that they represent the Best Available Techniques (BAT) for the facility. The proposals are in line with the requirements of Environment Agency guidance Sector Guidance Note S5.06 Guidance for the Recovery and Disposal of Hazardous and Non-Hazardous Waste, and the Waste BREF.

Sewer Discharge

The operator has submitted an H1 assessment to determine the impact of the treated leachate on the receiving environment. The operator submitted an H1 risk assessment which demonstrated that all contaminants, with the exception of chromium, cyanide and silver, could be considered insignificant as they are less than 4% of the receiving river Environmental Quality Standards (EQS). However, on closer inspection it was apparent that the operator had undertaken the assessment on the incorrect receiving environment. We asked the operator to redo and resubmit the H1 assessment based on the correct receiving environment. We ensured the operator had used:

- our H1 Annex D1 guidance.
- the correct river and river flow data.
- the correct (or more conservative) sewage strength factors (STRF)
- the effluent flow and quality as stated in their report in the correct units. (the operator used more conservative assumptions than the Sector Guidance Note for the removal rates of a number of substances through the Leachate Treatment Plant).
- an assumed upstream quality of 50% of EQS
- data for dissolved silver and not total silver

The H1 assessment concluded that all substances except chloride and PAHs, could be screened out as not significant.

We re-ran the H1 assessment to test the sensitivity of the outputs to those in the operator's assumptions using:

- amended STRF where more conservative figures were used by the operator than in our guidance.
- mean values of effluent quality with all less than values in the base data taken at face value (e.g. <1 would be 1).
- mean values of effluent quality for substances failing test 3 or 4
- upstream quality at both 10% & 50% EQS
- total silver data.

The amended H1 assessment concludes that all substances except PAHs and Diuron are screened out.

It is unlikely Diuron and PAHs will be present at significant concentrations in the effluent therefore we are satisfied that an emissions limit is not required on the permit. To ensure that Diuron and PAHs are not present in significant amounts we have inserted process monitoring table S3.14 into the permit which requires the operator to test the leachate prior to discharge to ensure these contaminants are not present in significant amounts

We have determined the limits for the discharge to sewer based on the results of the H1 assessment, which demonstrates what the highest concentrations of a contaminant can be while remaining insignificant under our H1 assessment. This is to ensure that the discharge to sewer will not result in an adverse impact on the River Stort (the receiving water body), which would directly contravene the Environmental Permitting Regulations which state that there must be no deterioration of a water body as a result of a permitted facility. As a result of the H1 risk assessment conclusions and the points outlined above we have not set any sewer discharge limits within the permit as there is a Trade Effluent Discharge Consent in place with more appropriate limits to control the discharge.

Odour Management

The operator has confirmed that the SBR tanks will not be roofed in order to control the temperature of the internal process. We have raised this as an issue with the operator as the SBR tanks could be a significant cause of odour if not managed correctly. The operator has provided an addendum to the odour management plan for the site which shows how the tanks will be managed so as to prevent odour.

The operator has stated that they will undertake regular site walk and surveys around the facility. Additionally the operator has determined that odour should not be caused by the process provided the tanks are kept well oxygenated. To this end, the operator has determined that the dissolved oxygen levels within the SBR tanks will be kept at a minimum of 0.5 mg/l.

If the leachate treatment facility is believed to be causing unacceptable odour, the operator has stated they will implement the following measures:

- Investigate which tank is the source of the odour and establish the cause;
- If a specific leachate is the source of the odour, inputs of that leachate will cease until further odour control measures have been introduced; and
- If odours still persist, the following further odour control measures can/will be undertaken:
 - all liquid inputs will be undertaken below the liquid surface to prevent splashing which can cause odour;
 - the mixing or aeration within the tanks will be improved to prevent an aerobic environment forming and the formation of stagnant volumes of liquid;
 - connection of the tanks to suitable odour filtration systems; and
 - temporary mobile odour masking equipment

Based on the information above, we are satisfied that the operator can operate the leachate treatment facility in such a way as to prevent odour. If odour does occur, the operator has in place an odour management plan which outlines the steps that will be taken to rectify the situation as soon as possible. We have incorporated the odour management plan into the operational techniques within the permit to ensure that the leachate treatment facility is operated in accordance with the plan.

Phased Construction of the Soil Treatment Facility

The operator has requested a temporary amendment to the operating techniques for the Soil Treatment Facility to allow a phased construction of the facility. This will result in a temporary change to the layout of the waste storage area. The operator proposes to store both hazardous and non-hazardous waste on the eastern pad as part of the first phase of construction while the process is being refined. The operator has stated that while the wastes will be stored on the same pad, the wastes will not be mixed and run-off from these wastes will be kept separate.

Any leachate generated from the hazardous soils will be collected and stored separately and will be tested prior to disposal. Based on the results of the testing, the leachate will either be sent to a hazardous waste treatment facility for process, or if analysis indicates that the leachate is non-hazardous, the operator will direct the leachate to the sites leachate treatment plant.

Once the soil treatment process is fully established the second phase of construction will be undertaken (south western pad) and the whole site will operate as is currently permitted (hazardous and non-hazardous waste separated on different pads)

The operator has demonstrated to our satisfaction that they can successfully separate hazardous and non-hazardous wastes. The operator has put in place sufficient infrastructure to ensure that run-off from the hazardous soils and non-hazardous soils can be collected separately. We are satisfied the operator has demonstrated they have an appropriate management system which will ensure that the risk to the environment from the phasing of the Soil Treatment Facility will be minimum. We have assessed their proposals and consider them to be BAT.

Pre-Treatment of Road Sweepings

The operator has applied to undertake the pre-treatment of non-hazardous road sweepings via screening and dewatering before the road sweepings are accepted into the Soil Treatment Facility for recovery or disposal. The screening and dewatering of the road sweepings has been included as a Directly Associated Activity (DAA) to the Soil Treatment Facility. The operator has stated that the dewatering will take place on an impermeable surface with sealed drainage. Any run-off from this area will be directed to the site's leachate treatment facility for treatment.

We have assessed the operator's proposals and consider them to be acceptable. The waste code for road sweepings (20 03 03) has already been included as a waste that can be accepted within the Soil Treatment Facility. This amendment allows this waste to be physically pre-treated to ensure that the material is suitable for treatment within the Soil Treatment Facility.

Gas Engine Carbon Filters

The operator has applied to install carbon filters within the Gas Utilisation Plant as an alternative to the currently permitted PpTex Siloxane Removal System. This will consist of the installation of 2 x 20m³ vessels which contain a variety of grades of activated carbon and graphite media. The landfill gas will pass over the carbon filters, which will remove up to 99% of Siloxanes and other contaminants via absorption to the filters before being directed to the engines and flares.

Spent carbon will be classed as hazardous waste and therefore will not be landfilled. It will be taken off-site by a competent contractor. We have assessed the operator's proposal of gas pre-treatment and we are satisfied the proposed system is in line with the requirements of our guidance.

Annex 1: decision checklist

This document should be read in conjunction with the Duly Making checklist, the application and supporting information and permit/notice.

Aspect considered	Justification / Detail	Criteria met
		Yes
Consultation		
Scope of consultation	The consultation requirements were identified and implemented. The decision was taken in accordance with RGN 6 High Profile Sites, our Public Participation Statement and our Working Together Agreements.	✓
Responses to consultation and web publicising	The web publicising and consultation responses (Annex 2) were taken into account in the decision. The decision was taken in accordance with our guidance.	✓
Operator		
Control of the facility	We are satisfied that the applicant (now the operator) is the person who will have control over the operation of the facility after the grant of the permit. The decision was taken in accordance with EPR RGN 1 Understanding the meaning of operator.	✓
European Directives		
Applicable directives	All applicable European directives have been considered in the determination of the application.	✓
The site		
Extent of the site of the facility	The operator has provided a plan which we consider is satisfactory, showing the extent of the site of the facility A plan is included in the permit and the operator is required to carry on the permitted activities within the site boundary.	✓
Biodiversity, Heritage, Landscape and Nature Conservation	The application is within the relevant distance criteria of a site of heritage, landscape or nature conservation, and/or protected species or habitat. A full assessment of the application and its potential to	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	<p>affect the site has been carried out as part of the permitting process. We consider that the application will not affect the features of the site.</p> <p>We have not formally consulted on the application. The decision was taken in accordance with our guidance.</p>	
Environmental Risk Assessment and operating techniques		
Environmental risk	<p>We have reviewed the operator's assessment of the environmental risk from the facility.</p> <p>The operator's risk assessment is satisfactory.</p> <p>For further detail see the Sewer Discharge in Key issues of the decision section.</p>	✓
Operating techniques	<p>We have reviewed the techniques used by the operator and compared these with the relevant guidance notes.</p> <p>Operational procedures have been submitted as part of the application which cover different aspects of site operations including the following:</p> <ul style="list-style-type: none"> • Waste pre-acceptance – the composition of the waste will be known prior to acceptance to the site and will comply with waste acceptance criteria limits as set out in Table 3.7 of the operator's waste acceptance procedures. The operator will ensure that waste will only be accepted if there is sufficient capacity. The operator will ensure that information about the process that produced the waste, predicted quantities and any hazards associated with the waste are known. • Waste acceptance – on arrival at the Leachate Treatment Plant all documentation will be checked and 1 load in 10 will be analysed to determine compliance with the waste acceptance criteria limits. While non conforming wastes are not expected at the site as the waste will be coming from specific sources, the operator will reject all non-conforming wastes and maintain written details of these wastes. • Waste storage – wastes accepted from Westmill Landfill and the Soil Treatment Plant will be stored in a dedicated tank and will not be mixed with other wastes prior to treatment. Wastes accepted from outside sources will be stored in a dedicated tank and will not be mixed with any other wastes. All tanks are appropriately sized and have adequate 	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
	<p>bunding.</p> <ul style="list-style-type: none"> Point source emissions from the process – treated effluent will be discharged to sewer. There are no other point source emissions from the process. Abatement of fugitive emissions – the operator has put in place sufficient odour mitigation measures and operating techniques to ensure that odour is kept to a minimum. Secondary tank bunding – the operator has linked the SBR tanks together via a high level pipe which ensures that both tanks have sufficient bund capacity as required by the Waste BREF. Raw and final leachate tanks are double skinned and the operator will ensure that adequate secondary bunding is put in place around these tanks in compliance with the requirements of the Waste BREF. <p>The proposed techniques/emission levels are in line with the requirements and benchmark levels contained in the Sector Guidance Note 5.06 Guidance for the Recovery and Disposal of Hazardous and Non-hazardous Waste, the Waste BREF and Technical Guidance Note EPR 1.00 How to Comply with your Environment Permit. We therefore consider them to represent appropriate techniques for the facility.</p>	
The permit conditions		
Waste types	<p>We have specified the permitted waste types, descriptions and quantities, which can be accepted at the regulated facility.</p> <p>We are satisfied that the operator can accept the wastes listed in the table S2.6 for the following reasons</p> <ul style="list-style-type: none"> The operator has demonstrated they have the appropriate treatment and containment infrastructure in place to accept these waste types; and These wastes are suitable for the treatment method proposed. 	✓
Incorporating the application	<p>We have specified that the applicant must operate the permit in accordance with descriptions in the application, including all additional information received as part of the determination process.</p> <p>These descriptions are specified in the Operating Techniques table in the permit.</p>	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
Emission limits	<p>We have decided that sewer emission limits should not be set for the parameters listed in the permit.</p> <p>The conclusions of the operator's H1 risk assessment determined that there is no requirement for limits more stringent than those outlined in the operator's trade effluent discharge consent. Therefore no sewer discharge limits have been set in the permit.</p>	✓
Monitoring	<p>We have decided that monitoring should be carried out for the parameters listed in the permit, using the methods detailed and to the frequencies specified.</p> <p>We have required updated monitoring for the operator's discharge to sewer and have introduced table S3.14 into the permit which requires the operator to monitor the leachate quality of both SBR tanks once the leachate has been treated, prior to discharge to the final effluent tank.</p> <p>The treated leachate from both SBR tanks will be stored within a single blending tank, therefore it is necessary to monitor the outputs of the treatment tanks to ensure that if there is a breach in the limits set in the sewer discharge, these can be traced back to the origin. Monitoring of the SBR tanks will also ensure that the treatment process is undertaken to the standards set out in the application, and will help to pinpoint any abnormalities in the treatment process early, before they become an issue for the operator.</p>	✓
Reporting	We have specified reporting in the permit.	✓
Operator Competence		
Environment management system	There is no known reason to consider that the operator will not have the management systems to enable it to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.	✓
Technical competence	Technical competency is required for activities permitted. The operator is a member of an agreed scheme.	✓
Relevant convictions	<p>The National Enforcement Database has been checked to ensure that all relevant convictions have been declared.</p> <p>Relevant convictions were found. A post conviction plan was submitted by the operator and assessed as satisfactory by us</p> <p>The operator satisfies the criteria in RGN 5 on Operator Competence.</p>	✓

Aspect considered	Justification / Detail	Criteria met
		Yes
Financial provision	<p>There is no known reason to consider that the operator will not be financially able to comply with the permit conditions. The decision was taken in accordance with RGN 5 on Operator Competence.</p> <p>The financial provision arrangements satisfy the financial provisions criteria.</p>	✓

Annex 2: Consultation and web publicising responses

Summary of responses to consultation and web publication and the way in which we have taken these into account in the determination process.

Response received from
Public Health England (PHE)
Brief summary of issues raised
<ul style="list-style-type: none">Based solely on the information contained in the application provided, PHE has no significant concerns regarding risk to health of the local population from this proposed activity, providing that the applicant takes all appropriate measures to prevent or control pollution, in accordance with the relevant sector technical guidance or industry best practice. <p>In relation to potential risk to public health, we recommend that the Environment Agency also consult the following relevant organisation(s) in relation to their areas of expertise:</p> <ul style="list-style-type: none">the local authority for matters relating to impact upon human health of contaminated land; noise, odour, dust and other nuisance emissions;the Food Standards Agency, where there is the potential for deposition on land used for the growing of food crops or animal rearing; andthe Director of Public Health for matters relating to wider public health impacts.
Summary of actions taken or show how this has been covered
<p><u>Appropriate measures</u></p> <ul style="list-style-type: none">The operator has demonstrated through their application that they will implement appropriate measures in line with the requirement of our guidance and the BREF.The relevant guidance on appropriate measures and best practice has been incorporated into the permit operating techniques. This requires the operator to operate in line with these documents.The permit contains conditions 3.2, 3.3, 3.4 which require the operator to prevent pollution. <p><u>Consultation</u></p> <p>We have consulted external organisation in line with our working together agreements. These include Public Health England, Director of Public Health, Environmental Health, Food Standards Agency, Health and Safety Executive and the Local Planning Authority.</p>

Response received from
Local authority – Planning Department
Brief summary of issues raised
No comments
Summary of actions taken or show how this has been covered
N/A

Response received from
Local authority – Environmental Health department
Brief summary of issues raised
<ol style="list-style-type: none"> 1) Increased lorry movements 2) Noise and amenity issues 3) Groundwater and leachates issues at the landfill 4) Whether the site is capable of expansion
Summary of actions taken or show how this has been covered
<ol style="list-style-type: none"> 1) Increased lorry movements to and from the site is not regulated under the Environmental Permitting regulations, this is covered by the site's planning permission. 2) Refer to PHE response above regarding pollution prevention. 3) This application surrounds the installation of the leachate treatment plant. It does not make changes to the existing landfill leachate infrastructure and engineering. 4) Capability of site expansion is not regulated under the Environment Permitting Regulations. This is a planning issue.

The Director of Public Health, Food Standards Agency, Health and Safety Executive were consulted however, consultation responses were not received (receipt of comments to be received by 01/06/2015).

No relevant comments / representations were received during the web consultation period.

This proposal was also publicised on our website between 07/05/15 and 08/06/15 and no representations were received.